DATASHEET

PrimaryIO APA for VMware

primaryio

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Smart solutions to resolve Storage-IO bottlenecks in your Virtual Data Center

Virtualization has revolutionized datacenters with consolidated compute resources and shared storage arrays. The challenge is that efficient compute needs to be matched with high performance storage to prevent IO bottlenecks. Some datacenters have adopted a brute force approach by replacing rotational storage with all-flash arrays (AFAs) to overcome these performance issues. Since storage must be provisioned to meet peak demands, not only are periods of under-utilization frequent, but they vary within the datacenter's diverse set of workloads.

The PrimaryIO Application Performance Accelerator for VMware solves these challenges using an intelligent, data-driven, real-time analysis of IO usage of individual workloads. In fact, it analyzes at the level of individual virtual machines.

Solution: Application Performance Accelerator (APA) for VMware

The PrimaryIO APA for VMware combines server-side SSD caching and an integrated Smart I/O analyzer to resolve the storage IO bottlenecks in VMware powered datacenters - delivering higher VM density and superior performance. The two components combine to deliver up to 25X performance enhancements.

The PrimaryIO APA technology dynamically writes only the most relevant application data to maximize application performance and minimize expensive flash usage. APA is a VMware application tier plug-in that identifies component I/O blocks, such as tables, collections, and indexes in the PrimaryIO stream that are important to tuning the performance of a VMware datastore.

Key Features of Release 2.5

- vSphere 6.5 and 6.0 support *
- VMware Ready certification
- vSphere Storage Policy Management
- Interoperates with VMware operations, such as vMotion, HA, DRS, and snapshots
- Storage-agnostic, works with any back-end, flash, flash/hard disk combination
- Fault domains

* vSphere refers to both the ESX hypervisor and vCenter

Server-side SSD Caching

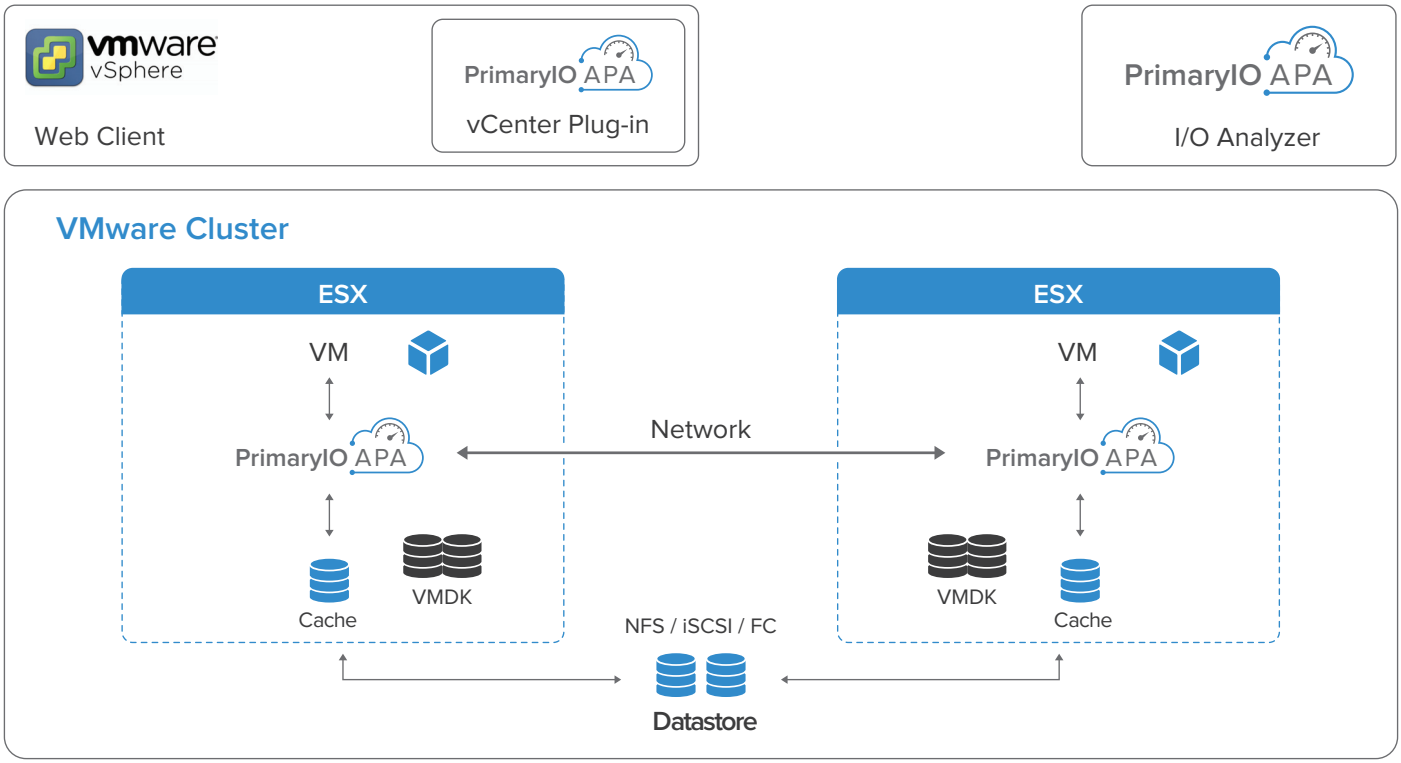
Key benefits

- Delivers up to 25X performance enhancement
- Fault tolerant with automatic failover
- Data-driven, configurable, application-level IO acceleration
- Cluster-wide cache pooling

The server-side SSD caching component transparently moves frequently accessed application data to an SSD cache to achieve up to 25X performance acceleration. It supports read as well as write-back caching. IO bursts are handled at SSD speeds supported by HDD's in background to achieve an optimal balance of cost and performance.

Key Features:

- High-availability uses redundant caches in the cluster
- Supports remote caches – does not require local SSDs on each ESX host
- VMDK-level cache isolation
- Fully integrated with vCenter using VAIO APIs
- SSD installation does not require ESXi hosts to be put in maintenance mode
- Supports all VMware certified hardware and SSDs



Smart I/O Analyzer

Key benefits

- Provides real-time recommendations for server-side SSD caching (with optimum cache sizes) to resolve storage health issues
- Deliver predictable performance, cluster-wide cache pooling, and node caching - even without local SSDs

The Smart I/O Analyzer works in a non-intrusive way to continuously monitor all IO traffic across multiple vCenter environments and provide a high-level view of the datacenter's storage utilization and IO health.

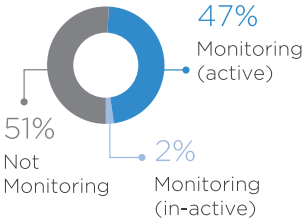
Key Features:

- Continuous monitoring across varied datacenter workloads
- Recommend ideal server-side cache sizes

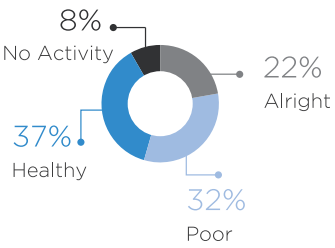
Key Benefit: Provides real-time recommnedations for server-side SSD caching (with optimum cache sizes) to resolve storage health issues

Storage Used (164.3 TB of 232.0 TB)

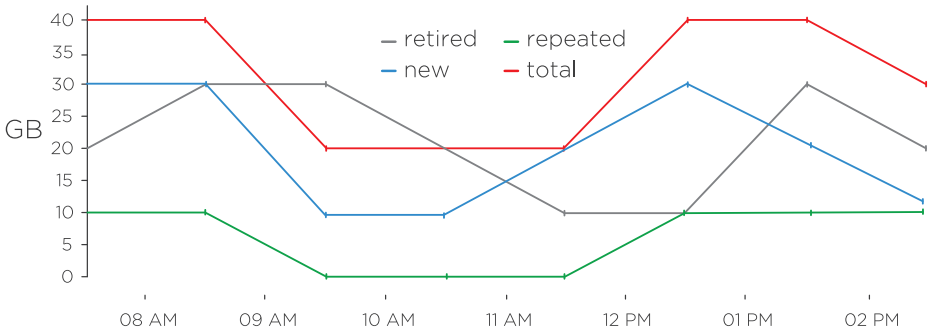
Active Dataset (69.9 TB of 164.3 TB)



Active Dataset Health



Active Dataset Change for 8 hours



System Requirements

Item	Requirement
ESXi version	ESXi 6.0 U2, ESXi 6.5
Network	10 Gbps or higher
SSD	Any SSD supported by VMware
vCenter Web Client	ESXi 6.0 U2; 6.5 flash only, partial support for HTML
PIO Software Appliance	ESXi 6.0 U2; ESXi 6.5
Supported Browsers	Chrome v5.0 or higher, Firefox v4.0 or higher

Supported Platforms

Item	Requirement
Server Platforms	• Cisco UCS Series • Dell PowerEdge Series • IBM xSeries platforms • HP DL380 series • All other server platforms on the VMware HCL
Flash Devices	• Fusion-io ioDrive/ioDrive2 • Intel DC S3700 Series SSD • Any other flash device on the VMware HCL
Storage Systems	• All storage systems supported by VMware (iSCSI, FC/FCoE, NFS)
vSphere Version	• ESXi 6.0 U2/ESXi 6.0 U2a (vSphere refers to both the ESX hypervisor and vCenter)
Datastores	• VMFS-5, NFS, vSAN, VVol
Hypervisor Version	• ESXi 6.0 U2
Guest Operating Systems	• All guest operating systems compatible with ESXi 6.0 U2
Management Server Database	• Microsoft SQL Server 2012, 2008 • Microsoft SQL Server 2008 Express • Microsoft SQL Server 2012 Express

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